Case Report

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Spondylodiscitis due to *Aerococcus viridans*

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Aerococcus viridans is a microaerophilic, Gram-positive, catalase-negative coccus, found singly or in tetrads. To date, no case of spondylodiscitis due to this organism has been reported. We report what we believe to be the first case of spondylodiscitis caused by *A. viridans*, in a patient with decompensated liver failure, and discuss the possible pathogenesis of this rather uncommon pathogen in this case.

Case report

A 63-year-old man was admitted with a 1 month history of thoracolumbar pain, progressive bilateral leg weakness and urinary retention.

Six weeks prior to his presentation, whilst on holiday in Australia for few months, he had suffered minor back trauma. He continued to complain of low-grade back pain, which persisted after returning to Northern Ireland. His past medical history included atrial fibrillation, congestive cardiac failure and chronic obstructive pulmonary disease. He had been diagnosed with chronic liver disease due to alcohol excess 2 years previously.

His hobbies included freshwater fishing; during his trip to Australia he had received multiple fishing hook injuries to his fingers. In Australia, he ate sea foods including raw prawn, crayfish and lobster. He had no history of recent gastroenteritis.

Physical examination revealed a spastic paraparesis with a T7 sensory level. Tenderness of the thoracolumbar spine was demonstrated. No meningismus was present. The initial haemoglobin was 14.1 g dl⁻¹ with a mean corpuscular volume of 112.4 fl, the white blood cell count was 5×10^9 l⁻¹, the platelet count was 106×10^9 l⁻¹ and the C-reactive protein level was 98.3 mg l⁻¹. Three consecutive sputum specimens showed no acid-fast bacilli on Ziehl–Neelsen staining and culture was negative for mycobacteria. His urine was negative for Bence–Jones's protein and for mycobacteria.

Initial magnetic resonance images revealed a T7–8 discitis with a paravertebral abscess and cord compression extending to the level of T11 (Fig. 1a).

The clinical, as well as ultrasound, findings and abnormal liver function tests were suggestive of decompensated cirrhosis, portal hypertension and ascites, and he was thought to be suffering from complications of varices and encephalopathy which were managed medically. He was too sick to undergo gastroscopy.

A CT guided biopsy of the bone and soft tissue of the affected thoracic spine was performed before antibiotics were commenced, and a Gram stain of the specimen revealed Gram-positive cocci in pairs. After 48 h, a pure culture of a bacterium grew which was subsequently identified as *Aerococcus viridans* using the API 20 STREP system (bioMérieux). Culture of the biopsy material was negative for mycobacterial species. Given the sensitivity profile of the organism (sensitive to penicillin, erythromycin, trimethoprim, chloramphenicol, tetracycline, ceftriaxone and cefotaxime), intravenous ceftriaxone, 2 g twice daily, was commenced. Due to the high risk of general anaesthesia, spinal fixation and cord decompression was felt to be contraindicated and therapy with antibiotics alone was planned.

A trans-oesophageal echocardiogram was unremarkable and at least three sets of blood culture samples were negative.

After 3 weeks of this treatment, moderate clinical improvement in the sensory and sphincter dysfunction was noted, and a repeat MRI scan showed discitis at T7–8 associated with collapse of the seventh thoracic vertebra.

Following 6 weeks of treatment with ceftriaxone, he received oral amoxicillin, 1 g four times per day, and probenecid, 500 mg twice daily for a further 6 weeks. A repeat MRI scan then showed reduced paravertebral mass and no evidence of discitis (Fig. 1b). He was subsequently transferred to a spinal unit for rehabilitation.

Discussion

A. viridans is a microaerophilic Gram-positive, catalase-negative coccus, found singly or in tetrads. The organism can be found as an indigenous inhabitant on the upper airways and skin of healthy individuals (Uh *et al.*, 2002). Infection is common in lobsters, causing Gaffkaemia (Uh *et al.*, 2002), and in other crustaceans such as crab and some prawn species (Brock & Lightner, 1990). The disease is endemic on both sides of the Atlantic but has not been reported from Australia, however (Prawn risk assessment technical issues paper; <http://>

Fig. 1. (a) Sagittal T2 weighted MRI shows high signal intensity within the T7–8 thoracic intervertebral disc (black arrow) with loss of CSF signal anteriorly, indicating cord encroachment. Destruction of the inferior endplate of T7 is seen with associated high signal extending into the vertebral body (spondylodiscitis). (b) Sagittal T2 weighted image shows normal signal at T7–8 level, indicating resolution of the discitis (white arrow), despite development of kyphosis.

www.daffa.gov.au/_data/assets/word_doc/0015/16701/98-086b.doc). *A. viridans* rarely causes disease in humans; previous cases include bacteraemia (Uh *et al.*, 2002; Popescu *et al.*, 2005), septic arthritis (Taylor & Trueblood, 1985) and infective endocarditis (Popescu *et al.*, 2005), usually in association with immunosuppression or the presence of previously damaged tissue. Spondylodiscitis has been associated with *Aerococcus urinae* (Astudillo *et al.*, 2003; Tekin *et al.*, 2006), a related species of *Aerococcus*. To date, no case of discitis with *A. viridans* has been described to our knowledge. The route of acquisition is unclear in this case. We hypothesize that this man was immunocompromised due to his liver cirrhosis and became bacteraemic following inoculation from a fish hook injury or following invasion from his gastrointestinal system after eating infected imported crustaceans. Alternatively, acquisition of the infection was unrelated to his travel to Australia.

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